absolute event timestamp **206**. As a first such example, a facility device **102** may record information about the precision and accuracy of the absolute event timestamp **206**, such as the last time that the facility device **102** synchronized with the grandmaster clock **200**. As a second such example, in addition to recording the incidence of a facility event **130**, a facility device **102** may detect at least one event property of the facility event **130**, and record the event property in the record of the facility event **130** and the absolute event timestamp **206** in the data store **134** (e.g., various forms of data describing the event).

[0052] FIG. **6** presents an illustration of an example scenario featuring several variations of the techniques presented herein. In this example scenario, a set of facility devices **102** within a particle detector facility **100** is connected through a power, data, and clock network **604** that provides time synchronization in addition to data **120** and power **608** distribution, such as a power-over-Ethernet (PoE) channel. Among the facility devices **102**, a first facility device **102** (e.g., a workstation) is designated as a grandmaster clock **200**, and two other facility devices **102** (e.g., a neutron chopper and a beam monitor) are designated as master clocks **602**. The grandmaster clock **200** performs a grandmaster clock-master clock time synchronization **606** with the master clocks **602**, and the master clocks **602**, in turn, perform a master clock-facility device time synchronization **610** with other facility devices **102** (e.g., a neutron instrument and a particle accelerator). In this manner, the facility devices **102** are configured to achieve time synchronization using a general data, power, and clock network **604** in a distributed manner in accordance with the techniques presented herein.

E. Use of Terms

[0053] Embodiments or examples, illustrated in the drawings, are disclosed below using specific language. These examples are provided to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The embodiments or examples are not intended to be limiting. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they have structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims. Any alterations and modifications in the disclosed embodiments, and any further applications of the principles disclosed in this document are contemplated as would normally occur to one of ordinary skill in the pertinent art.

[0054] Although the subject matter has been described in language specific to structural features and/or methodological acts, it is to be understood that the subject matter of the appended claims is not necessarily limited to the specific features or acts described above. Rather, the specific features and acts described above are disclosed as example forms of implementing the claims.

[0055] As used in this application, the terms "component," "module," "system", "interface", and the like are generally intended to refer to a computer-related entity, either hardware, a combination of hardware and software, software, or software in execution. For example, a component may be, but is not limited to being, a process running on a processor, a processor, an object, an executable, a thread of execution, a program, and/or a computer. By way of illustration, both an application running on a controller and the controller can be a component. One or more components may reside within a process and/or thread of execution and a component may be localized on one computer and/or distributed between two or more computers.

[0056] Furthermore, the claimed subject matter may be implemented as a method, apparatus, or article of manufacture using standard programming and/or engineering techniques to produce software, firmware, hardware, or any combination thereof to control a computer to implement the disclosed subject matter. The term "article of manufacture" as used herein is intended to encompass a computer program accessible from any computer-readable device, carrier, or media. Of course, those skilled in the art will recognize many modifications may be made to this configuration without departing from the scope or spirit of the claimed subject matter.

[0057] Various operations of embodiments are provided herein. The order in which some or all of the operations are described should not be construed as to imply that these operations are necessarily order dependent. Alternative ordering will be appreciated by one skilled in the art having the benefit of this description. Further, it will be understood that not all operations are necessarily present in each embodiment provided herein.

[0058] As used in this application, "or" is intended to mean an inclusive "or" rather than an exclusive "or". In addition, "a" and "an" as used in this application are generally be construed to mean "one or more" unless specified otherwise or clear from context to be directed to a singular form. Also, at least one of A and B and/or the like generally means A or B or both A and B. Furthermore, to the extent that "includes", "having", "has", "with", or variants thereof are used in either the detailed description or the claims, such terms are intended to be inclusive in a manner similar to the term "comprising".

[0059] Also, although the disclosure has been shown and described with respect to one or more implementations, equivalent alterations and modifications will occur to others skilled in the art based upon a reading and understanding of this specification and the annexed drawings. The disclosure includes all such modifications and alterations and is limited only by the scope of the following claims.

What is claimed is:

1. A system for configuring a particle detector facility to record event times within a particle facility, the system comprising:

a grandmaster clock designating component that causes a set of facility devices to identify one facility device of the particle facility as a grandmaster clock; and

a clock synchronizing component comprising instructions that:

synchronizes a clock component with the grandmaster clock; and

upon detecting an event:

retrieves from the clock component of the selected facility device an absolute event timestamp that is independent of event times of other events; and

records the event with the absolute event timestamp.

2. The system of claim **1**, wherein respective facility devices within the set comprise at least one of: